

Applicants: Anne Marie Rodriguez, et al.
Serial No.: 10/632,581
Filed : July 31, 2003
Page 3

Amendment to the claims:

The following listing of claims will replace all prior versions and listings, of claims in this application.

Listing of claims:

1. (currently amended) An isolated adult multipotent human stem cell comprising:
 - i) significant telomerase activity of at least 20% to 50% of the telomerase activity of the HEK293T transformed cell line,
 - ii) an HLA Class I negative phenotype,
 - iii) a normal karyotype,
 - iv) a capacity to become quiescent, and
 - v) a capacity for self-renewal preserved for at least 130 population doublings, and
 - vi) an endogenous β -galactosidase activity of less than 0.05% at 60 population doublings.
2. (previously presented) The stem cell according to claim 1, wherein the stem cell has a self-renewal capacity preserved for at least 200 population doublings.
3. (previously presented) The stem cell according to claim 1 or claim 2, wherein the stem cell can be isolated from human adipose tissue.
4. (previously presented) The stem cell of claim 3, wherein the stem cell can differentiate into a cell of endodermal, ectodermal or mesodermal origin.
5. (previously presented) The stem cell of claim 4, wherein the stem cell is capable of differentiating into an adipocyte, osteoblast,

Applicants: Anne Marie Rodriguez, et al.
Serial No.: 10/632,581
Filed : July 31, 2003
Page 4

myocyte, chondrocyte or endothelial cell.

6. (previously presented) The stem cell of claim 5, wherein the stem cell has a telomerase activity corresponding to at least 20% of the telomerase activity of a reference cell line.
7. (previously presented) The stem cell of claim 6, wherein the stem cell expresses the transcription factor Oct-4 and/or Rex-1.
8. (cancelled)
9. (previously presented) A cell population comprising a plurality of cells as in any one of claims 1, 51 and 53, wherein the cell population is free of adipocytes, fibroblasts, preadipocytes, endothelial cells, pericytes, mastocytes, and smooth muscle cells.
10. (previously presented) The cell population of claim 9, wherein the cell population is clonal.
11. (withdrawn - currently amended) The cell population according to claims 9 ~~or 10~~, wherein the cell population becomes quiescent after about 60 population doublings.
12. (withdrawn) The cell population of claim 11, wherein the cell population is capable of proliferating in the presence of growth factors such as basic fibroblast growth factor (bFGF), PDGF, EGF, NGF, SCF.
13. - 24. (cancelled)
25. (currently amended) Stem cells obtainable by carrying out the

method comprising the following steps of claim 13.:

- culturing cells from a human adipose tissue obtained from a child under 10 years of age,
- selecting two cell sub-populations terms a "CA" population and "CS" population, the "CA" population having an adhesion rate of less than 12 hours, and the "CS" population having an adhesion rate of more than 12 hours,
- enriching the "CA" population until a quiescent cell population is obtained,
- inducing proliferation of stem cells of the "CA" population.

26. (previously presented) Stem cells according to claims 1 or 25, for use in therapy.
27. (previously presented) Stem cells of claim 26, wherein the therapy comprises transplantation of cells into an individual followed by cell differentiation and tissue regeneration in vivo.
28. (previously presented) Stem cells of claim 26, wherein transplantation is allogenic.
29. - 47. (cancelled)
48. (previously presented) A pharmaceutical composition comprising a plurality of cells according to claims 1 or 25, and a physiologically acceptable excipient.
49. (previously presented) An isolated adult multipotent human cell, termed a "CS" cell wherein the cell:
 - i) has an HLA Class I negative phenotype,
 - ii) has a normal karyotype,
 - iii) has a self-renewal capacity that is preserved for about 40

Applicants: Anne Marie Rodriguez, et al.
Serial No.: 10/632,581
Filed : July 31, 2003
Page 6

- to 60 population doublings,
 - iv) is not capable of becoming quiescent, and
 - v) has a proliferation rate which is not affected by LIF.
50. (previously presented) An isolated multipotent human cell population termed a "CS" population comprising a plurality of cells according to claim 49.
51. (previously presented) The stem cell of claim 1, wherein the cell has the following phenotype:
- HLA class I negative;
 - HLA class II negative;
 - CD3 negative;
 - CD13 positive;
52. (previously presented) The stem cell according to claims 1 or 51, wherein the cell has a CD13 positive phenotype in the presence of 10% foetal calf serum.
53. (previously presented) An isolated adult multipotent human stem cell, characterized in that after reaching quiescence, it stably exhibits the following phenotype in vitro:
- HLA class I negative,
 - HLA class II negative,
 - CD3 negative,
 - CD13 positive,
 - LIF-R negative,
 - Oct-4 positive,
 - Rex-1 positive,
 - ABCG2 positive,
- and in that it has a normal karyotype and significant telomerase activity of at least 20% to 50% of the telomerase activity of the

Applicants: Anne Marie Rodriguez, et al.
Serial No.: 10/632,581
Filed : July 31, 2003
Page 7

HEK293T transformed cell line.

54. (previously presented) The cell of claim 53, wherein the cell has immunoprivileged behavior in vivo and a capacity to migrate in the undifferentiated state.